

Crew Autonomy Measures and Models (CAMM), Phase I

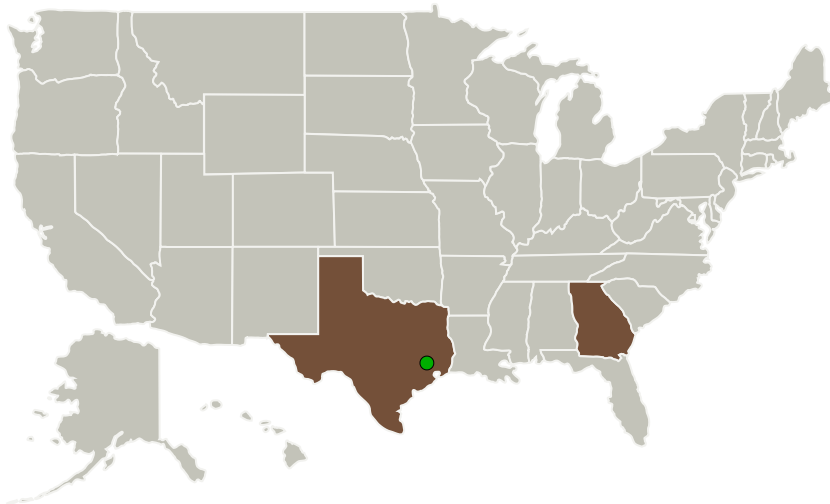
Completed Technology Project (2010 - 2010)



Project Introduction

SA Technologies will employ a two-part solution including measures and models for evaluating crew autonomy in exploratory space missions. An integrated measurement and modeling approach will support NASA scientists in determining the optimal levels of crew autonomy under various mission conditions and constraints. Research results will produce a measurement application that provides multiple standard and custom tools for direct assessment of team autonomy and related constructs like team processes, social and performance outcomes, workload and situation awareness. The computer-based measurement application will support data collection, review, and high-level analysis of results. The models of crew autonomy will be theoretical and computer-based. Prescriptive, theoretical models support understanding the interrelationships among the key factors associated with performance and crew autonomy. Computer models will include important mission parameters and operationally-defined levels of crew autonomy to enhance capability for predicting outcomes associated with various crew autonomy levels. Phase I research will focus on defining factors associated with mission outcomes and crew autonomy levels, along with development concepts for the measurement application and modeling tool. Phase II will involve development of a functional prototype of the Crew Autonomy Measures and Models (CAMM).

Primary U.S. Work Locations and Key Partners



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Organizations Performing Work	Role	Type	Location
SA Technologies, Inc.	Lead Organization	Industry	Marietta, Georgia
● Johnson Space Center(JSC)	Supporting Organization	NASA Center	Houston, Texas

Primary U.S. Work Locations	
Georgia	Texas

Project Transitions

▶ **January 2010:** Project Start

✓ **July 2010:** Closed out

Closeout Documentation:

- Final Summary Chart(<https://techport.nasa.gov/file/138905>)

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

SA Technologies, Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

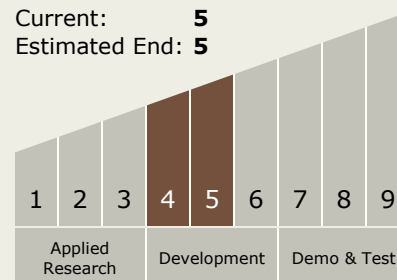
Carlos Torrez

Principal Investigator:

Jennifer L Riley

Technology Maturity (TRL)

Start: 4
Current: 5
Estimated End: 5



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Technology Areas

Primary:

- TX06 Human Health, Life Support, and Habitation Systems
 - └ TX06.3 Human Health and Performance
 - └ TX06.3.3 Behavioral Health and Performance

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System